Response of Okra to Water Stress

Ali Ünlükara[1,*], Bilal Cemek[2]

[1]Department of Biosystems Engineering, Faculty of Agriculture, Erciyes University, 38039, Kayseri, Turkey

[2]Department of Agricultural Structures and Irrigation, Faculty of Agriculture, Ondokuz Mayıs University, 55050, Samsun, Turkey

*Correspondence: unlukara@erciyes.edu.tr

ABSTRACT

Different water amounts were applied to determine response of okra (Abelmoschus esculentus L. Akköy 41) to water stress in a study conducted in Tokat, Turkey. The irrigation treatments consisted of the applications of 100%, 75% and 50% of depleted water from root zone of okra. The experiment was designed according to randomized block with three replications. Soil moisture along okra growing season was monitored by gravimetric method. Water consumption and fresh fruit production were found 664 mm and 28690 kg/ha, 596 mm and 24691 kg/ha and 506 mm and 20554 kg/ha for I_{100}, I_{75} and I_{50} treatments, respectively. Fresh fruit yield and total dry biomass above ground were significantly affected from water stress but fruit numbers and fruit yield per plant, mean fruit weight, dry fruit yield, harvest index, irrigation water use efficiency and water use efficiency w.ere not affected significantly. Okra was found sensitive against water stress for fresh fruit yield with yield response factor of 1.22 while it was found tolerant for dry fruit yield with yield response factor of 0.71. Dry matter ratio of fruit increased from 15.1% for I_{100} to 18.0% for I_{50} treatment. It can be concluded from the results that okra under water stress promoted fruit yield against vegetative growth because of its increasing harvest index.

Keywords: Yield response factor, abelmoschus esculentus, water regime

Oral Presentation, No: 1075